

**REMARKS**

Applicant appreciates the consideration shown by the Office as evidenced by the Office Action mailed on 26<sup>th</sup> Nov 2004. In that Office Action, the Examiner rejected claims 1-22 and 24-28. The Examiner objected to claim 23. In this Response, Applicant has amended claims 1, 2, 3, 15, and 17, and has introduced new claims 64 and 65. Claims 1-65 remain pending in this application. Applicants respectfully request favorable reconsideration in light of the above amendments and the following remarks.

**A. Claim Rejections****1. Wang**

Claims 1, 3, 5, 6, 7, 11, 12, 15, 18, 19, 24, and 25 were rejected under 35 U.S.C. 102(e) as being anticipated by Wang ("Wang"), U.S. 2003/0148042. Applicant respectfully traverses this rejection.

Applicant respectfully asserts that the pending claims are patentable over the cited reference because Wang was not filed before the invention by Applicant. With this Response, Applicant submits the enclosed Rule 131 Declaration and the associated Exhibit A pursuant to 37 C.F.R. § 1.131 to establish that the invention date of the invention recited by the instant claims predates the filing date of Wang. Specifically, according to paragraph 2 of the Declaration, the inventor T.M. Angeliu declares that the subject matter disclosed and claimed in the above-referenced application was conceived prior to Dec 28, 2001. In support of paragraph 3, Exhibit A is a redacted "Disclosure Letter Outline" referring specifically to the invention disclosed and claimed in the referenced application. Therefore, Applicant submits that Exhibit A in its entirety, along with the corresponding Rule 131 Declaration, is sufficient to demonstrate conception of the claimed subject matter prior to Dec 28, 2001, the effective date of the Wang reference. In view of this evidence, Applicant respectfully submits that Wang does not meet the requirements of 102(e) prior art in this case, and thus the rejection involving Wang should be removed.

**2. Angeliu et al.**

Claims 1-12, 17, and 20-22 were rejected under 35 U.S.C. 102(b) as being anticipated by Angeliu et al. ("Angeliu"), U.S. 6,251,159. Applicant respectfully traverses this rejection.

This applied reference does not teach or suggest all of the limitations of independent claim 1. Angeliu fails to teach, suggest, or disclose the use of ultrasonic energy as a technique to disperse material within a molten material.

Angeliu discloses forming metal matrix composites by dispersing nanophase particles in the metallic melt. As noted by the Examiner, the Angeliu does not disclose the use of ultrasonic energy for dispersion of the particles in the melt. Instead, Angeliu describes that the nanoparticles are added mechanically into the melt phase and the dispersing comprises mechanically mixing the nanophase particles in the melt. Col.4, lines 47-55. In stark contrast, claim 1 of the present application, as amended herein, recites the use of ultrasonic agitation to obtain a dispersion of nano-sized material within a molten material. The distinct advantages of ultrasonic agitation are clearly brought out in paragraph 18 of the specification. Since Angeliu does not disclose each and every element of amended claim 1, and its dependent claims 2-12, 17, and 20-22, Applicant respectfully submits that these claims are patentably distinct from this applied reference.

### 3. Wang or Angeliu

Claims 13 and 14 are rejected under 35 U.S.C 103(a) as being unpatentable over either Wang or Angeliu et al. Applicant respectfully traverses this rejection. Both of these claims depend from claim 1, which Applicant believes is allowable over both references for the reasons described above. Applicant respectfully submits that claims 13 and 14 are allowable over the applied references because each depends from an allowable independent claim.

### 3. Wang and Angeliu

Claims 16, 26-28 are rejected under 35 U.S.C 103(a) as being unpatentable over the combined disclosures of Angeliu and Wang. Applicant respectfully traverses this rejection. As described above, Wang does not qualify as statutory prior art with respect to the present application because the date of invention by Applicant predates the filing date of Wang. The Examiner relied upon Wang to remedy Angeliu's lack of a suggestion regarding the use of ultrasonic energy to disperse the nano-sized material within the molten material. As Wang does not qualify as prior art, the applied combination fails to teach, suggest, or disclose every element of the invention recited in these rejected claims. Applicants respectfully submit that these claims

are allowable over the applied reference combination. Favorable reconsideration is respectfully requested.

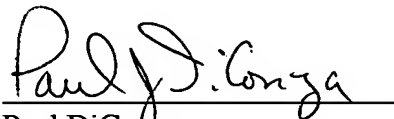
**C. Allowable Subject Matter**

The Examiner objected to Claim 23 as being dependent upon a rejected base claim. The Applicants appreciatively note the Examiner's acknowledgement that Claim 23 recites allowable subject matter. Further the Applicants believe that, for the reasons described above, Claim 1 is allowable as it stands and therefore the Applicants submit that as the Claim 23 depends from an allowable claim, the Claim 23 should be allowable. Applicants respectfully request favorable reconsideration of this objection.

**D. Conclusion**

In light of the remarks presented herein, Applicants believe that this serves as a complete response to the subject Office Action. If, however, any issues remain unresolved, the Examiner is invited to telephone the undersigned at the number provided below.

Respectfully submitted,



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Attachment: Rule 131 Declaration